

CLAIMS

Please amend the claims as follows:

1. (Currently Amended) In a wireless communications system, a method for preventing degradations in channel performance caused by puncturing information bits of uncertain sign into an otherwise continuous pilot channel comprising:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols; and

calculating a channel phase estimate ~~improving the channel performance by using only the reconstructed continuous sequence of pilot symbols to calculate a channel phase estimate.~~

2. (Previously Presented) In a wireless communication system, a method of reverse link power control, comprising:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

summing the energy value with at least one additional calculated energy value to produce a combined energy value;

comparing the combined energy value to a threshold in a threshold comparator;

outputting a reverse link power control decision based on the threshold comparison.

3. (Previously Presented) The method of claim 2 wherein an energy calculator calculates the energy value for the pilot symbols by computing the energy estimate of the information symbols and the pilot symbols, and combining the estimates over all fingers of a rake receiver in lock.

4. (Previously Presented) A method for determining when a finger of a rake receiver is in lock, comprising:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

providing the pilot symbols to an energy calculator to calculate an energy value for the pilot symbols;

inputting the calculated energy value to a received signal strength indicator filter to integrate the energy value over a predetermined time period, producing an integrated energy value;

comparing the integrated energy value to a predetermined threshold in a threshold comparator; and

generating a finger lock decision based on the threshold comparison.

5. (Currently Amended) In a wireless communication system, a method for generating an accurate frequency estimate, comprising:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of in-phase and quadrature-phase pilot symbols;

delaying the in-phase and quadrature-phase pilot symbols by a predetermined amount;

calculating a cross product of the in-phase and quadrature-phase pilot symbol to produce in-phase and quadrature-phase frequency error estimate signals; and

masking [[the]] a frequency error estimate signal out of a frequency estimate.

6. (Currently Amended) In a wireless communications system, an apparatus for preventing degradations in channel performance caused by puncturing information bits of uncertain sign into an otherwise continuous pilot channel comprising:

means for reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols; and

means for calculating a channel phase estimate ~~improving the channel performance~~ by using only the reconstructed continuous sequence of pilot symbols ~~to calculate a channel phase estimate.~~

7. (Previously Presented) In a wireless communication system, an apparatus for reverse link power control, comprising:

means for reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

means for summing the energy value of the pilot symbols with at least one additional calculated energy value to produce a combined energy value;

means for comparing the combined energy value to a threshold in a threshold comparator;

means for outputting a reverse link power control decision based on the threshold comparison.

8. (Previously Presented) The apparatus of claim 7 wherein an energy calculator calculates the energy value for the pilot symbols by computing the energy estimate of the information symbols and the pilot symbols, and combining the estimates over all fingers of a rake receiver in lock.

9. (Previously Presented) An apparatus for determining when a finger of a rake receiver is in lock, comprising:

means for reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

means for providing the pilot symbols to an energy calculator to calculate an energy value for the pilot symbols;

means for inputting the calculated energy value to a received signal strength indicator filter to integrate the energy value over a predetermined time period, producing an integrated energy value;

means for comparing the integrated energy value to a predetermined threshold in a threshold comparator; and

means for generating a finger lock decision based on the threshold comparison.

10. (Currently Amended) In a wireless communication system, an apparatus for generating an accurate frequency estimate, comprising:

means for reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of in-phase and quadrature-phase pilot symbols;

means for delaying the in-phase and quadrature-phase pilot symbols by a predetermined amount;

means for calculating a cross product of the in-phase and quadrature-phase pilot symbol to produce in-phase and quadrature-phase frequency error estimate signals; and

means for masking [[the]] a frequency error estimate signal out of a frequency estimate.

11. (New) A computer program product for preventing degradations in channel performance caused by puncturing information bits of uncertain sign into an otherwise continuous pilot channel, comprising:

a computer-readable memory comprising code for causing at least one computer for:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols; and

calculating a channel phase estimate by using only the reconstructed continuous sequence of pilot symbols.

12. (New) A computer program product for reverse link power control, comprising:

a computer-readable memory comprising code for causing at least one computer for:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

summing the energy value with at least one additional calculated energy value to produce a combined energy value;

comparing the combined energy value to a threshold in a threshold comparator;

outputting a reverse link power control decision based on the threshold comparison.

13. (New) The computer program product of claim 12 wherein an energy calculator calculates the energy value for the pilot symbols by computing the energy estimate of the information symbols and the pilot symbols, and combining the estimates over all fingers of a rake receiver in lock.

14. (New) A computer program product for determining when a finger of a rake receiver is in lock, comprising:

a computer-readable memory comprising code for causing at least one computer for:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

providing the pilot symbols to an energy calculator to calculate an energy value for the pilot symbols;

inputting the calculated energy value to a received signal strength indicator filter to integrate the energy value over a predetermined time period, producing an integrated energy value;

comparing the integrated energy value to a predetermined threshold in a threshold comparator; and

generating a finger lock decision based on the threshold comparison.

15. (New) A computer program product for generating a frequency estimate, comprising:

a computer-readable memory comprising code for causing at least one computer for:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of in-phase and quadrature-phase pilot symbols;

delaying the in-phase and quadrature-phase pilot symbols by a predetermined amount;

calculating a cross product of the in-phase and quadrature-phase pilot symbol to produce in-phase and quadrature-phase frequency error estimate signals; and
masking a frequency error estimate signal out of a frequency estimate.